

Programmable Logic Controller (PLC) Guide



PLC Training Systems

Model 3240-A

PLC: Allen-Bradley MicroLogix 1100

- Used by DeVry University for their PLC course
- Built-in 10/100 Mbps Ethernet/IP port for peer-to-peer messaging
- Eight fault switches
- Embedded Web server and LCD screen
- Online editing functionality
- Digital and Analog I/Os; Digital (24 VDC): 10 inputs (four 40kHz high-speed), 6 outputs (two 40 kHz high-speed); Analog (0 - 10 VDC): 2 inputs
- PID Capability
- Five push-button and five toggle switches
- 24 VDC built-in power supply
- Easy expansion using rackless I/O modules (Analog Expansion Module 3244-A)
- Onboard traffic light simulator
- Compatibility with MicroLogix and SLC instruction set
- Requires the *RSLogix 500* programming software (Model 3245-A)
- For programming, an Ethernet cable is included with the trainer, but a serial cable (Model 3246-4) can also be ordered
- Includes curriculum



Model 3240-B

PLC: Siemens ET200S IM151-8



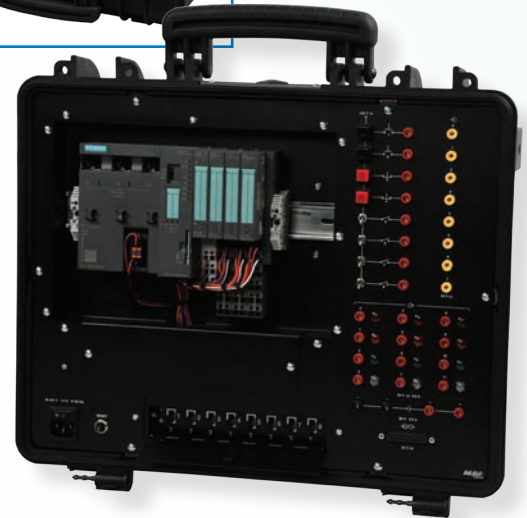
- 24 VDC built-in power supply
- 8 inputs (24 VDC only) and 12 outputs (24 VDC)
- Eight fault switches
- PID Capability
- Easy expansion using rackless I/O modules (analog expansion module 3244-B)
- Four push-buttons and four toggle switches
- Based on Siemens S7-300 technology (IM151-8 CPU)
- Requires the *Step 7* programming software (Model 5939)
- For programming, an Ethernet cable is included with the trainer
- Includes Siemens Resource Curriculum CD-ROM

PLC Training Systems

Model 3240-C

PLC: Siemens ET200S IM151-8

- Rugged suitcase for easy transportation and storage
- Includes storage compartment for cables and accessories
- 24 VDC built-in power supply
- 8 inputs (24 VDC only) and 12 outputs (24 VDC)
- Eight fault switches
- PID Capability
- Easy expansion using rackless I/O modules (analog expansion module 3244-C)
- Four push-buttons and four toggle switches
- Based on Siemens S7-300 technology (IM151-8 CPU)
- Requires the *Step 7* programming software (Model 5939)
- For programming, an Ethernet cable is included with the trainer
- Includes Siemens Resource Curriculum CD-ROM



Model 3240-4

PLC: Allen-Bradley MicroLogix 1200

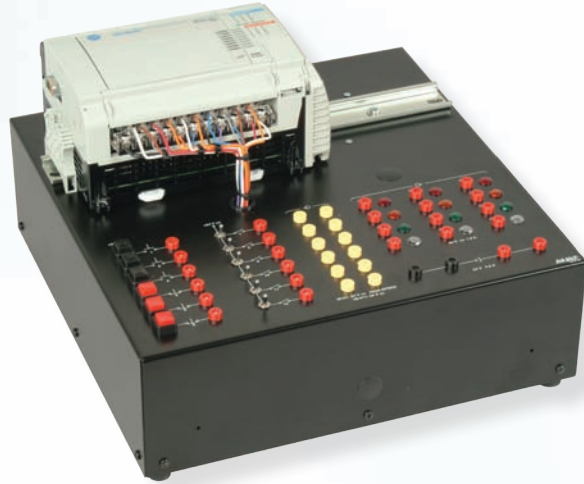
- Rugged suitcase for easy transportation and storage. Also include a storage compartment for cables and accessories
- Digital I/Os; 14 inputs (24 VDC), 10 Outputs (Relay – 24 VDC)
- 24 VDC built-in power supply
- Twelve fault switches
- PID Capability
- Easy expansion using rackless I/O modules (Analog expansion module 3244-4)
- Three push-button and four toggle switches
- Compatibility with MicroLogix and SLC instruction set
- Requires the *RSLogix 500* programming software (Model 3245-A)
- Programming serial cable is included with the model (with a serial-to-USB converter also included)
- Includes curriculum



PLC Training Systems

Model 3240-3

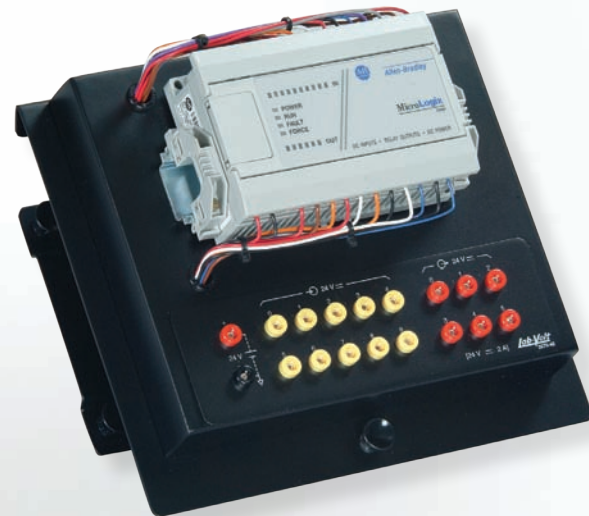
PLC: Allen-Bradley MicroLogix 1500



- 24 VDC built-in power supply
- 12 inputs (24 VDC only) and 12 outputs (24 VDC relay outputs)
- Eight fault switches
- PID Capability
- Easy expansion using rackless I/O modules (Expansion module 3244-3)
- Six push-buttons and six toggle switches
- Compatibility with MicroLogix and SLC instructions set
- Requires the *RSLogix 500* programming software (Model 3245-A)
- Programming serial cable is included with the model (with a serial-to-USB converter also included)
- Includes curriculum

Model 3270-4

PLC: Allen-Bradley MicroLogix 1000

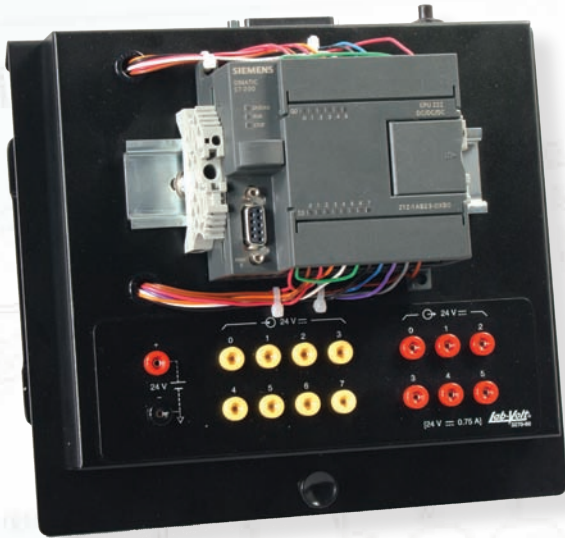


- Compact design
- Digital I/Os: 10 inputs (24 VDC), 6 outputs (Relay – 24 VDC)
- No possible expansion
- No PID Control
- Form-factor compatible with the Hydraulic/Pneumatic perforated work surfaces and the 8036 Industrial Controls workstations
- Compatibility with MicroLogix and SLC instruction set
- Requires the *RSLogix 500* programming software (Model 3245-A) and programming cable (3246-4)
- Used with Hydraulic and Pneumatic Systems, Models 6080 and 6081; includes curriculum

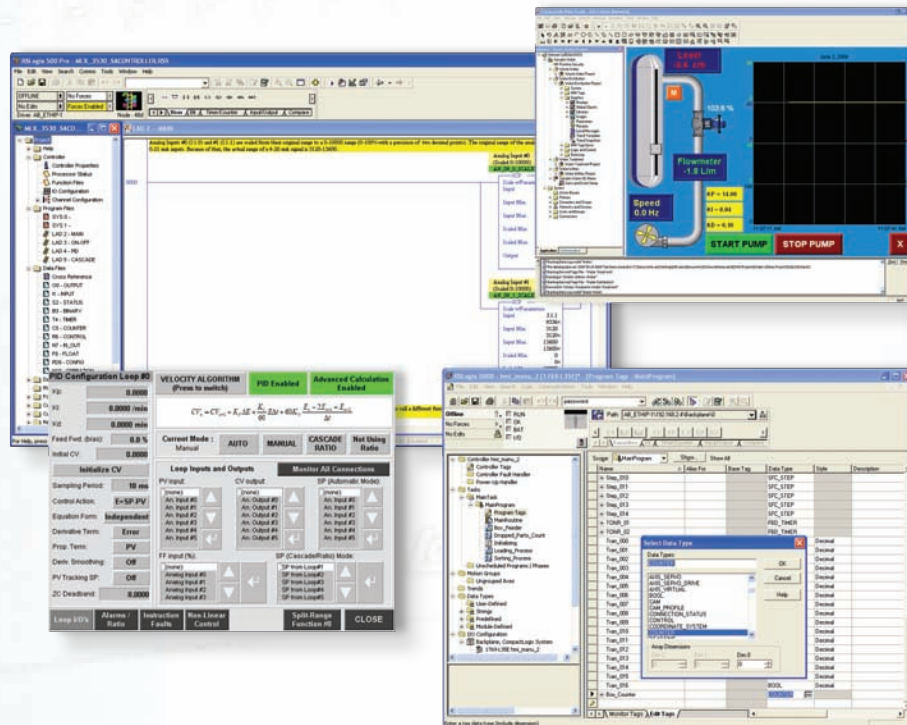
PLC Training Systems

Model 3270-6

PLC: Siemens SIMATIC S7-222



- Compact design
- Digital I/Os: 8 inputs (24 VDC) 6 outputs (Transistor - 24 VDC)
- Requires a 24 VDC power supply (Model 6360)
- Fully configurable, integrated PID controller
- Form-factor compatible with the Hydraulic/Pneumatic perforated work surfaces and the 8036 Industrial Controls workstations
- Requires Step7 Micro/Win programming software (Model 3245-3) and programming cable (Model 3246-3)
- Used with Hydraulic and Pneumatic Systems, Models 6080 and 6081; includes curriculum



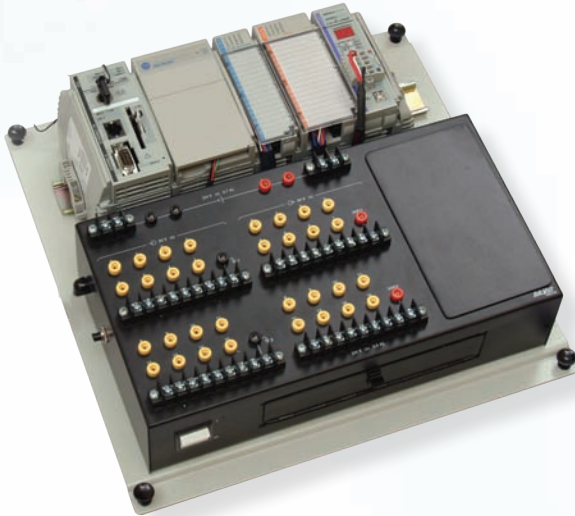
Various PLC Software Screen Images

PLC Training Systems

The PLCs on these two pages were designed specifically for the Flexible Manufacturing System, Models 5901-30, -40, -50, and -60 or the Industrial Controls Training System, Model 8036. These PLCs can also be used for PLC training.

Model 5930

PLC: Allen-Bradley CompactLogix L32E



- Digital I/Os: 16 inputs (24 VDC), 16 outputs (Relay - 24 VDC)
- Built-in 24 VDC power supply
- Eight fault switches
- PID Capability
- Easy expansion using rackless I/O modules
- Can be programmed using four languages: Relay ladder, structured text, sequential function chart, and function block diagram
- Supports three types of network communications: DF1 Full Duplex Serial Link (RS-232-C), Ethernet/IP, and DeviceNet
- Requires *RSLogix 5000 Lite Edition* programming software (Model 5935) and a standard RJ45 cable (included)

Model 5930-A

PLC: Allen-Bradley CompactLogix L43



- Digital I/Os: 16 inputs (24 VDC), 16 outputs (24 VDC)
- Built-in 24 VDC power supply
- Eight fault switches
- PID Capability
- Integrated Motion Control with SERCOS interface (Interface included with Model 5929-A from the Flexible Manufacturing System)
- Can be programmed using four languages: Relay ladder, structured text, sequential function chart, and function block diagram
- Supports four types of network communications: DF1 Full Duplex Serial Link, Ethernet/IP, SERCOS, and DeviceNet.
- Requires *RSLogix 5000 Lite Edition* programming software (Model 5935)
- Standard Ethernet cable included for programming
- Used with the 5901-3/-4 Flexible Manufacturing System curriculum

PLC Training Systems

Model 5930-B

PLC: Siemens S7-315T

- Digital I/Os: 16 inputs (24 VDC), 16 outputs (24 VDC)
- Built-in 24 VDC power supply
- Eight fault switches
- PID Capability
- Siemens Technological CPU
- Can be programmed using several languages
- Supports three types of network communications: DF1 Full Duplex Serial Link, PROFINET, and PROFIBUS.
- Requires *Step 7* programming software (Model 5939)
- Standard Ethernet cable included for programming
- Used with the 5901-5/-6) Flexible Manufacturing System curriculum



Model 3128

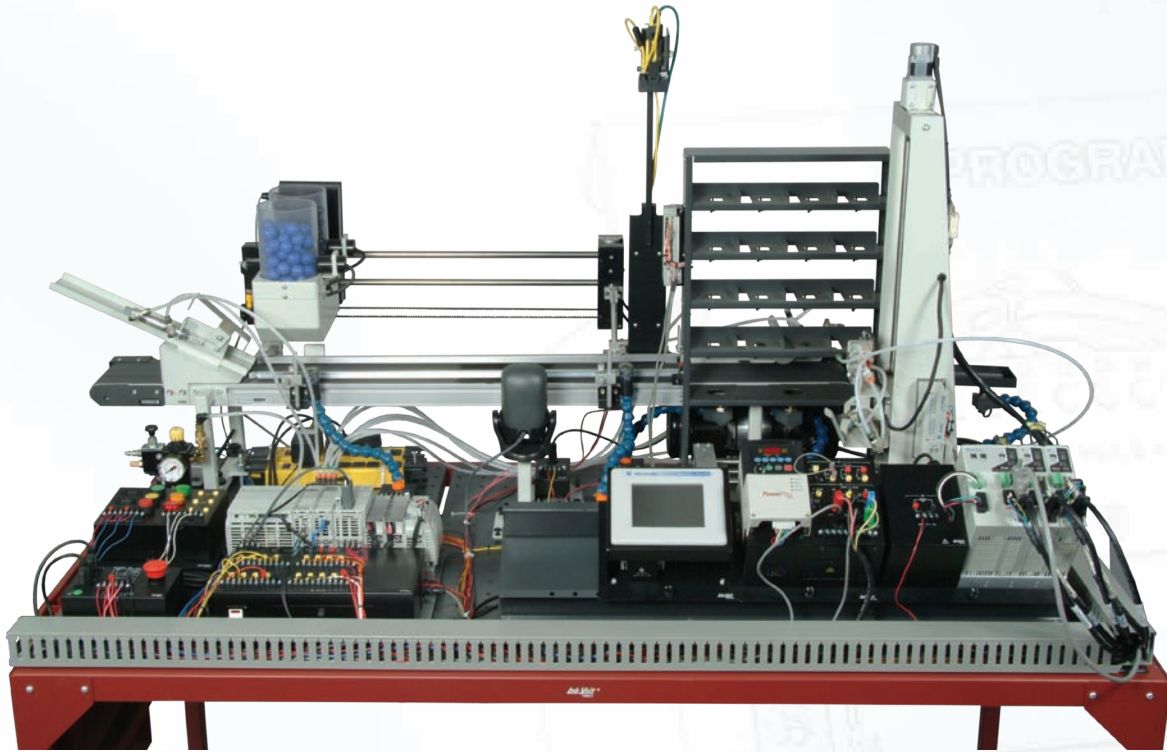
PLC: Moeller EASY512



- Compact design
- Digital I/Os: 8 inputs (24 VDC), 4 outputs (Relay - 24 VDC)
- LCD Display
- Two of the eight digital inputs can be configured as 0-10 VDC analog inputs
- Requires a 24 VDC power supply (Model 3139)
- Form-factor compatible with the 8036 Industrial Controls workstations
- Includes *EASY-SOFT Basic* programming software and programming cable
- Used with 8036 Industrial Controls System; includes curriculum

PLC Applications

Model 5901-3/-4 — Flexible Manufacturing System



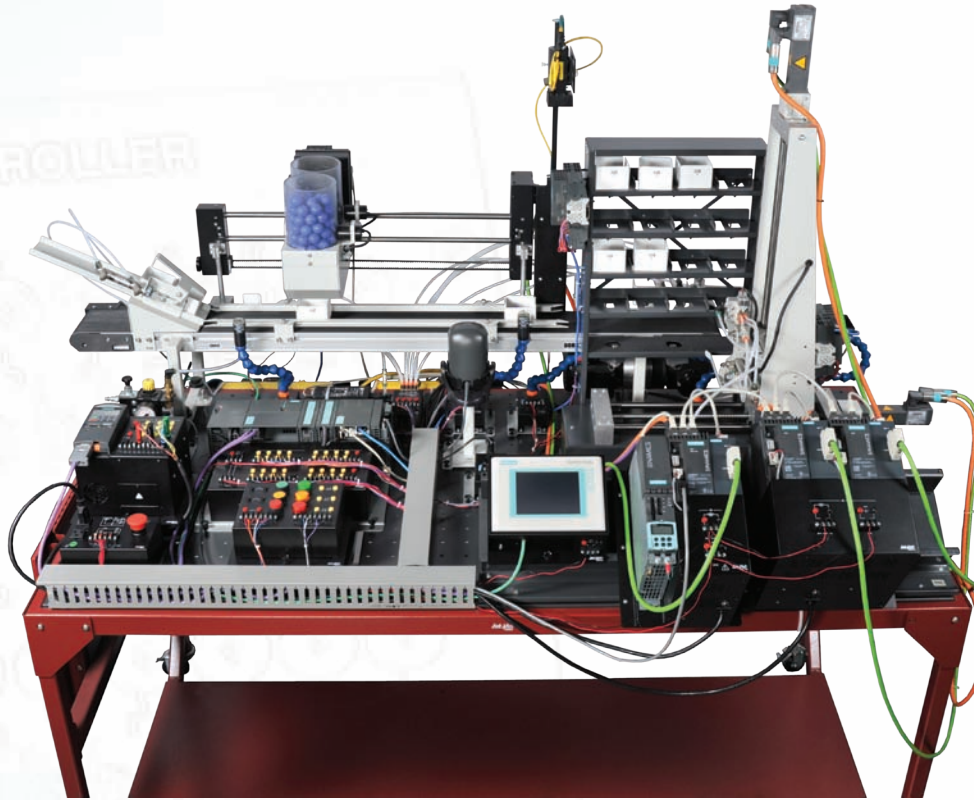
The Lab-Volt Flexible Manufacturing System (FMS) consists of two subsystems: Models 5901-3 and 5901-4. The Flexible Manufacturing System, Model 5901-3, allows students to familiarize themselves with manufacturing applications commonly encountered in modern facilities. The modular construction of the FMS permits a wide variety of setups allowing students to reproduce the operation of an industrial production line. Students will be introduced to programmable logic controller (PLC) programming, sensors, DeviceNet network configuration, quality control issues, and troubleshooting of FMS through a series of carefully designed exercises. The Flexible Manufacturing System (Advanced Applications), Model 5901-4, is an add-on to the Model 5901-3 and provides the latest manufacturing technology equipment to create more sophisticated applications. Banana jacks and terminal blocks are available on each module.

FMS Features

- Compatible PLCs: Refer to chart on pages 14-15
- Simulates the operation of a production line
Operation simulation of a production line in a classroom laboratory
- Cognex In-Sight Vision System
- Servo Control
- Automatic and Storage Retrieval Unit (optional Model 5940)
- Several communication networks (Ethernet IP, DeviceNet, Serial, SERCOS)
- Pneumatic-activated devices
- Variety of Sensors
- Human-Machine Interface
- Fault-insertion capabilities
- Includes job sheets

PLC Applications

Model 5901-5/-6 — Flexible Manufacturing System



The Flexible Manufacturing System, Models 5901-5 and 5901-6, is the Siemens version of the Flexible Manufacturing System, Model 5901. The system's main new feature is the integration of the motion instructions and settings directly in the S7-300 PLC. The Lab-Volt Flexible Manufacturing System (FMS) consists of two subsystems (Models 5901-5 and 5901-6). The Flexible Manufacturing System, Model 5901-5, allows students to familiarize themselves with manufacturing applications commonly encountered in modern facilities. The modular construction of the FMS permits a wide variety of setups allowing students to reproduce the operation of an industrial production line. Students will be introduced to programmable logic controller (PLC), sensors, PROFIBUS network configuration, quality control issues, and troubleshooting of FMS through a series of carefully designed exercises. The Flexible Manufacturing System (Advanced Applications), Model 5901-6, is an add-on to the Model 5901-5 and provides the latest manufacturing technology equipment to create more sophisticated applications. Banana jacks and terminal blocks are available on each module.

FMS Features

- Compatible PLCs: Refer to chart on pages 14-15
- Operation simulation of a production line in a classroom laboratory
- PROFIBUS Micromaster AC Drive
- Siemens S7-300 PLC
- Cognex In-Sight Vision System
- Servo Control
- Automatic and Storage Retrieval Unit (optional Model 5940)
- PLC compatible with PROFINET and PROFIBUS networking
- Current industry software for PLC programming, HMI configuration, and PROFINET networking
- Pneumatic-activated devices
- Variety of Sensors
- Human-Machine Interface
- Fault-insertion capabilities

PLC Applications

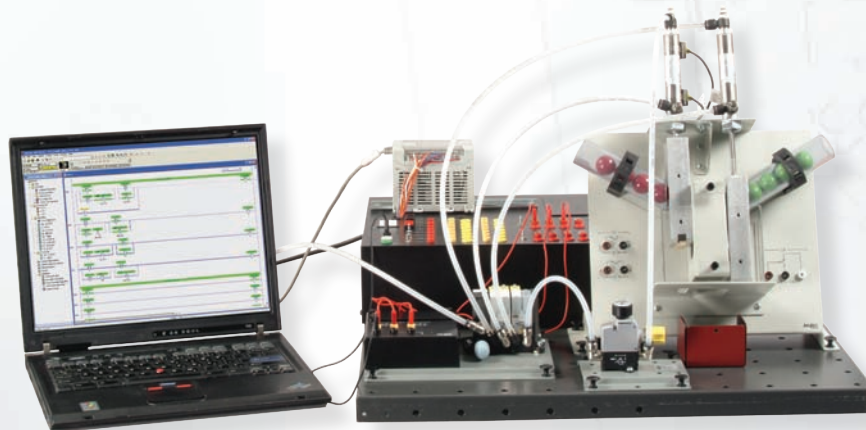
Model 8075-1 — Traffic Light System



Shown with optional equipment

- Compatible PLCs: Refer to chart on pages 14-15
- A well-known classic training system
- N-S/E-W traffic control with pedestrian crossing
- Another unit can be added to create a full, four-directions traffic light
- Flow management with proximity detectors
- Traffic light synchronization (optional)
- Fault insertion
- LEDs (long life)
- Ten 24 VDC control inputs
- Includes job sheets

Model 8075-2 — Electro-Pneumatic System

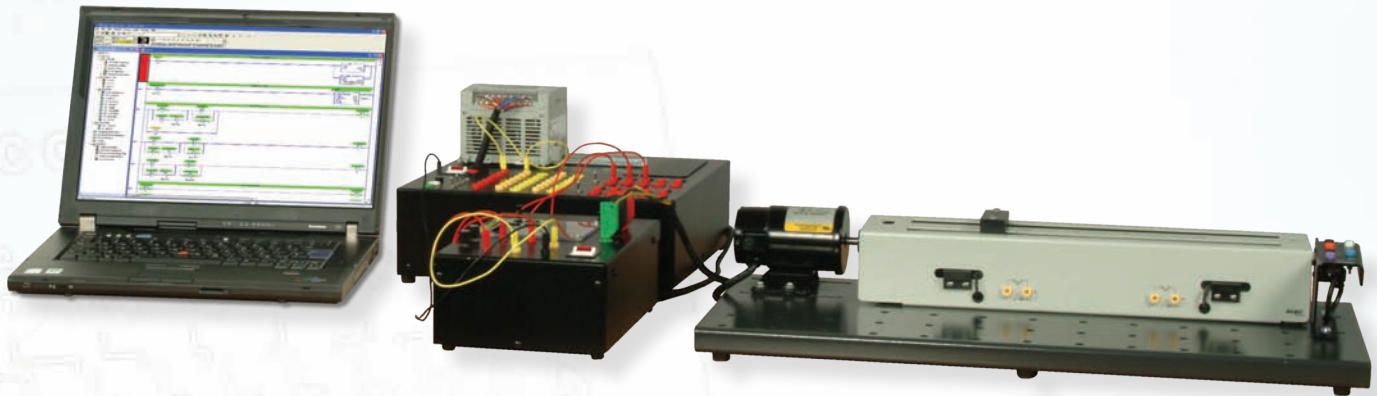


Shown with optional equipment

- Compatible PLCs: Refer to chart on pages 14-15
- Two double-acting cylinders
- Two reed switches and one mechanical limit switch for PLC feedback
- Perforated work surface
- Control valve station featuring single- and double-solenoid valves (Accepts three 24 VDC control signals from PLC)
- Applications: Stamping, hold and punch, filling process, etc.
- Fault insertion
- Includes job sheets

PLC Applications

Model 8075-3 — Electro-Mechanical System (DC Motor)



Shown with optional equipment

- Compatible PLCs: Refer to chart on pages 14-15
- Explores drives and lead screw positioning systems used in motion processes
- Industrial 1800 RPM, 90 VDC motor
- Two magnetic limit switches for PLC feedback
- Bi-directional, regenerative DC drive
- Perforated base to accommodate optional sensors
- Fault insertion
- Optional 100 ppr Optical Encoder
- Accepts three 24 VDC control signals from PLC
- Includes job sheets

Model 8075-4 — Electro-Mechanical System (Stepper Motor)



Shown with optional equipment

- Compatible PLCs: Refer to chart on pages 14-15
- High-torque Stepper motor
- Stepper motor drive programmed by computer using manufacturer software
- Programmable Stepper motor drive
- Motion sequences triggered by the PLC I/Os
- Lead screw mechanism
- Two magnetic limit switches for PLC feedback
- DC power supply
- Perforated base to accommodate optional sensors
- Fault insertion
- Optional 100 PPR Optical Encoder
- Accepts eight 24 VDC control signals from PLC
- Includes job sheets

PLC Applications

Model 8075-5 – Wind Turbine System

- Compatible PLCs: Refer to chart on pages 14-15
- System comprised of a Lab-Volt Nacelle Simulator – Model 3297 and a Wind Generator – Model 3213
- Small blower for generating air flow
- Nacelle equipped with DC motor and Mechanical clutch
- Two limit switches with NO and NC contacts
- Analog position sensor measures wind direction (0 - 10 V)
- Frequency variable pulse train signal measures wind speed (24 VDC)
- Requires external 24 V Power Supply
- Accepts two 24 VDC control signals from PLC for motor operation
- Includes job sheets



Model 8075-6 – Level Process Control System

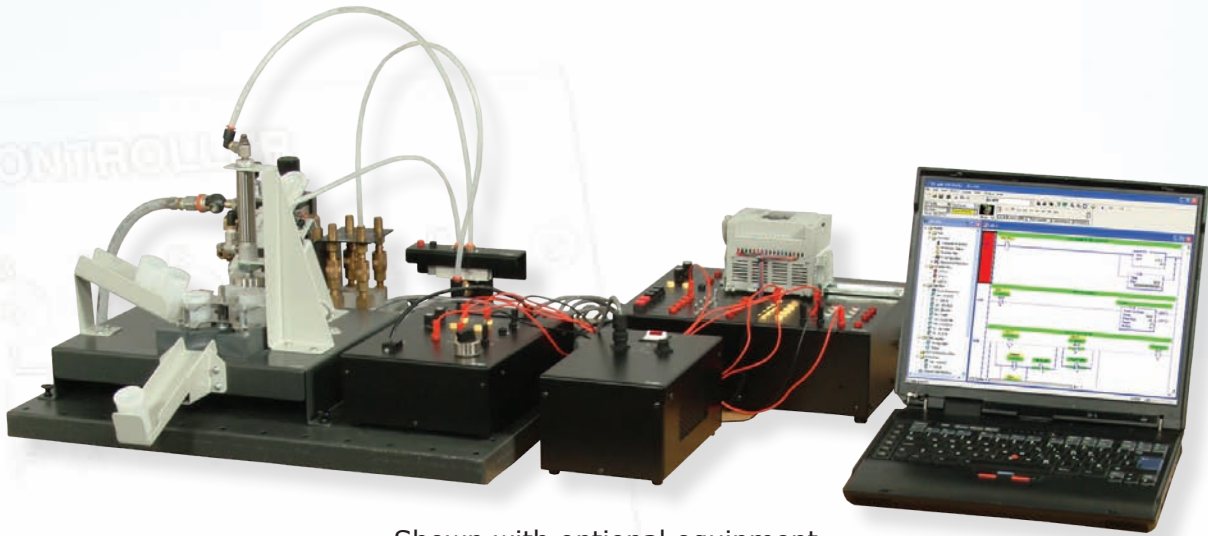


Shown with optional equipment

- Compatible PLCs: Refer to chart on pages 14-15
- Submersible variable speed pump
- Level process column
- Electronic level process Interface
- Float switch
- Capacitive level switch
- Magnetic level switch
- Solenoid valve
- Manual valve
- Optional analog level sensor
- Self-regulating process allows a variety of PLC control schemes
- Explore batch and PID control (dependent on PLC specifications)
- Includes job sheets

PLC Applications

Model 8075-7 — Bottling Process System



Shown with optional equipment

- Compatible PLCs: Refer to chart on pages 14-15
- Film canister capping process
- Compact application combines pneumatics, motion control, and PLC sequencing
- Two high-torque Stepper motors
- Dual Stepper motor drive
- Inductive proximity switch
- Mechanical switch
- Single solenoid directional valve
- Double-acting cylinder
- DC power supply
- Perforated work surface
- Dual Stepper motor drive can be used as a Step/Dir or Jog/Dir drive
- Optional accessories allow containers to be filled with liquid during process
- Includes job sheets



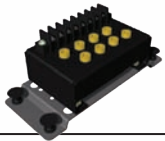
Easy Reference Guide – PLC Compatibility

PLC Applications		
Model	System	Compatible Lab-Volt Models/ PLCs
5901-3/-4	Flexible Manufacturing System	Model 5930-A: Allen-Bradley CompactLogix L43
5901-5/-6	Flexible Manufacturing System	Model 5930-B: Siemens SIMATIC S7-315T
6082-5	Hydraulics and Pneumatics Applications - Allen-Bradley PLC	Model 3270-4: Allen-Bradley MicroLogix 1000
6082-7	Hydraulics and Pneumatics Applications -Siemens PLC	Model 3270-6: Siemens SIMATIC S7-222
8075-1	Traffic Lights System	Model 3240-B: Siemens ET200S Model 3240-C: Siemens ET200S Model 3240-3: Allen-Bradley MicroLogix 1500 Model 3240-4: Allen-Bradley MicroLogix 1200 Other PLCs offer partial curriculum coverage. Model 3240-A: Allen-Bradley MicroLogix 1100 Model 3270-4: Allen-Bradley MicroLogix 1000 Model 3270-6: Siemens SIMATIC S7-222
8075-2	Electro-Pneumatic System	Model 3240-A: Allen-Bradley MicroLogix 1100 Model 3240-B: Siemens ET200S Model 3240-C: Siemens ET200S Model 3240-3: Allen-Bradley MicroLogix 1500 Model 3240-4: Allen-Bradley MicroLogix 1200 Model 3270-4: Allen-Bradley MicroLogix 1000 Model 3270-6: Siemens SIMATIC S7-222
8075-3	Electro-Mechanical System	Model 3240-A: Allen-Bradley MicroLogix 1100 Model 3240-B: Siemens ET200S Model 3240-C: Siemens ET200S Model 3240-3: Allen-Bradley MicroLogix 1500 Model 3240-4: Allen-Bradley MicroLogix 1200 Model 3270-4: Allen-Bradley MicroLogix 1000 Model 3270-6: Siemens SIMATIC S7-222

Easy Reference Guide - PLC Compatibility

PLC Applications		
Model	System	Compatible Lab-Volt Models/ PLCs
8075-4	Electro-Mechanical System	Model 3240-A: Allen-Bradley MicroLogix 1100 Model 3240-B: Siemens ET200S Model 3240-C: Siemens ET200S Model 3240-3: Allen-Bradley MicroLogix 1500 Model 3240-4: Allen-Bradley MicroLogix 1200 Model 3270-4: Allen-Bradley MicroLogix 1000 Model 3270-6: Siemens SIMATIC S7-222
8075-5	Wind Turbine Application System	Model 3240-A: Allen-Bradley MicroLogix 1100 Model 3240-B & 3244-B: Siemens ET200S and Analog Expansion Kit Model 3240-C & 3244-C: Siemens ET200S and Analog Expansion Kit Model 3240-4 & 3244-4: Allen-Bradley MicroLogix 1200 and Analog Expansion Kit Model 3240-3 & 3244-3: Allen-Bradley MicroLogix 1500 and Analog Expansion Kit
8075-6	Level Process Control System	Model 3240-B & 3244-B: Siemens ET200S and Analog Expansion Kit Model 3240-C & 3244-C: Siemens ET200S and Analog Expansion Kit Model 3240-4 & 3244-4: Allen-Bradley MicroLogix 1200 and Analog Expansion Kit Model 3240-3 & 3244-3: Allen-Bradley MicroLogix 1500 and Analog Expansion Kit Model 3240-A & 3244-A: Allen-Bradley MicroLogix 1100 and Analog Expansion Kit Other PLCs offer partial curriculum coverage. Model 3270-4: Allen-Bradley MicroLogix 1000 Model 3270-6: Siemens SIMATIC S7-222
8075-7	Bottling Application System	Model 3240-A: Allen-Bradley MicroLogix 1100 Other PLCs offer partial curriculum coverage.

Optional Equipment

Lab-Volt Optional Equipment		
Model	Image	Description
3139 6360		DC Power Supply: Some Lab-Volt PLCs do not feature built-in DC power supplies. However, these two PLCs are generally components of systems that already include the required 24 VDC supplies. Model 3139 is part of the 8036 Industrial Controls system. Model 6360 is part of the Hydraulic and Pneumatic Systems, Models 6080 and 6081.
3201-3204		3201: Push-Buttons/Lights - Features two NO and one NC momentary push-button, and three LED indicator lights. Can simulate a Start/Pause/Stop station with indicator lights. 3202: Toggle Switches/Lights - Features three toggle switches and three LED Indicator Lights. 3203: Rotary Switch - Features two rotary switches with NO and NC contacts. 3204: Emergency Switch - Features one emergency switch with two NO contacts (one for low voltage and the other for line voltage)
3205		Wiring Module - This multi-purpose module allows easy interface between customers' existing PLCs and 2 mm leads and jacks used with the Lab-Volt PLC Applications. This model can also be used to practice wiring skills using the terminal blocks.
3210		Optical Encoder - This model is an optional add-on to the Electro-Mechanical applications. It provides position feedback (100 PPR) with signal levels compatible with the PLC 24 VDC inputs.
3214		Level Sensor - This model is an optional add-on to the Process Control system (8075-60). It provides water level feedback (0-5 VDC or 4-20 mA) through the Level Process Interface.
5924		Signal Tower: The Signal Tower consists of three lights providing visual feedback of the state of a process. It can be used to indicate if an application is running, paused, or stopped. Lights are stacked one upon another, up to five modules (standard unit contains three modules). Each module is easily programmable without any special wiring or tools. An Acoustic Alarm, Model 39303, is available as an option.
6085		Sensors Training System - This system contains a selection of photoelectric, inductive, and capacitive sensors representative of what can be found in industry. These sensors can be used with a variety of PLC applications.
6410-A0		Portable Compressor - The Air Compressor consists of a quiet 7.6-liter (two-gallon) air compressor. Its quiet pump and motor make it ideal for classroom and school laboratories. The Air Compressor can be used to provide compressed air to the Conditioning Unit, Model 6411-A.
6411-A0		Conditioning Unit - The Conditioning Unit consists of a main shutoff valve, a filter, a pressure regulator, a pressure gauge, a sleeve valve, and a muffler. It conditions and limits the pressure of the air supplied to the pneumatic circuits. The Conditioning Unit must get its compressed air from a central air supply or a portable unit such as the optional Air Compressor, Model 6410-A.

Easy Reference Guide - PLC Applications and Components

		Traffic Lights	Electro- Pneumatic	Electro- Mechanical - DC Motor	Electro- Mechanical - Step Motor	Wind Turbine	Level Process Control	Bottling Process
Model Number	Description	8075-1	8075-2	8075-3	8075-4	8075-5	8075-6	8075-7
3201	Push-Buttons/Lights		Opt					Opt
3202	Toggle Switch/Lights			Opt	Opt			
3203	Rotary Switch							
3204	Emergency Switch		Opt	Opt	Opt	Opt	Opt	Opt
3205	Wiring Module (two required)		Opt	Opt	Opt	Opt	Opt	Opt
3206	DC Power Supply – Stepper Motor				1			1
3207	Stepper Motor Drive				1			
3208	Stepper Motor Drive Dual							1
3209	DC Motor Drive			1				
3210	Optical Encoder			Opt	Opt			
3213	Wind Generator					1		
3214	Level Sensor						Opt	
3215	Level Process Interface						1	
3216	Pressure Regulator c/w gauge		1					
3217	Station Control Valves		1					
3291	Traffic Lights	1						
3292	Electro-Pneumatic		1					
3293	Electro-Mechanical – DC Motor			1				
3294	Electro-Mechanical – Stepper Motor				1			
3295	Process Control						1	
3296	Bottling Process							1
3297	Nacelle Simulator					1		
5924	Signal Tower		Opt	Opt	Opt			Opt
6309	Storage/Work Surface		1					1
6410-A	Portable Compressor		Opt					Opt
6411-A0	Conditioning Unit		Opt					Opt
6424	Directional valve, single solenoid							1

Opt = Optional equipment for advanced experimentation. (6410-A required if no alternate air source is available.)

P = Partial curriculum coverage only.

***** = Requires corresponding Analog Expansion Kit (Model 3244-XX) to perform all exercises.

Easy Reference Guide - PLC Applications and Components

		Traffic Lights	Electro-Pneumatic	Electro-Mechanical - DC Motor	Electro-Mechanical - Step Motor	Wind Turbine	Level Process Control	Bottling Process
Model Number	Description	8075-1	8075-2	8075-3	8075-4	8075-5	8075-6	8075-7
PLC Compatibility								
3240-A	Allen Bradley MicroLogix 1100	P	✓	✓	✓	✓	✓*	✓
3240-B\~C	Siemens ET200S (IM151-8)	✓	✓	✓	✓	✓*	✓*	P
3240-3	Allen-Bradley MicroLogix 1500	✓	✓	✓	✓	✓*	✓*	P
3240-4	Allen Bradley MicroLogix 1200	✓	✓	✓	✓	✓*	✓*	P
3270-4	Allen Bradley MicroLogix 1000	P	✓	✓	✓	✗	P	P
3270-6	Siemens S7-222	P	✓	✓	✓	✗	P	P

P = Partial curriculum coverage only.

***** = Requires corresponding Analog Expansion Kit (Model 3244-XX) to perform all exercises.

Easy Reference Guide - PLC Training Systems Specifications

Specifications	3240-A	3240-B	3240-C	3240-3	3240-4	3270-4	3270-6	5930	5930-A	5930-B	3128-00
Manufacturer	Allen-Bradley	Siemens	Siemens	Allen-Bradley	Allen-Bradley	Allen-Bradley	Siemens	Allen-Bradley	Allen-Bradley	Siemens	Moeller
Processor	MicroLogix 1100	ET200S IM151-8	ET200S IM151-8	MicroLogix 1500	MicroLogix 1200	MicroLogix 1000	SIMATIC S7-222	CompactLogix L32E	CompactLogix L43	SIMATIC S7-315T	EASY512
24 VDC Inputs	10	8	8	12	14	10	8	16	16	16	8
24 VDC Outputs	6	12	12	12	10	6	6	16	16	16	4
Analog I/O	2 voltage inputs	-	-	-	-	-	-	-	-	-	2 voltage inputs
Power Requirements	120-240 V 50/60 Hz	120-240 V 50/60 Hz	120-240 V 50/60 Hz	120-240 V 50/60 Hz	120-240 V 50/60 Hz	24 VDC	24 VDC	120-240 V 50/60 Hz	120-240 V 50/60 Hz	120-240 V 50/60 Hz	24 VDC
Communication Ports	Serial, Ethernet	MPI, PROFINET (Ethernet)	MPI, PROFINET (Ethernet)	Serial	Serial	Serial	Peripheral Port	Serial, Ethernet/IP, DeviceNet	Serial, Ethernet/IP, DeviceNet, SERCOS	MPI, PROFINET (Ethernet), PROFIBUS, Serial	Peripheral Port
Fault Switches	8	8	8	8	12	-	-	8	8	8	4
Accessories											
Programming Software	RS Logix 500 3245-A*	Step 7 5939	Step 7 5939	RS Logix 500 3245-A*	RS Logix 500 3245-A*	RS Logix 500 3245-A*	Step 7 Micro/Win 3245-3	RSLogix 5000 Lite Edition 5935*	RSLogix 5000 Lite Edition 5935*	Step 7 5939	EASYSOFT Basic (included)
Programming Cable	3246-4 or included Ethernet cable	Included Ethernet Cable	Included Ethernet Cable	Included Serial Cable with USB converter	Included Serial Cable with USB converter	3246-4	3246-3	Included Ethernet cable	Included Ethernet cable	Included Ethernet cable	Included Serial cable
Analog I/O Expansion Kit	3244-A	3244-B	3244-C	3244-3	3244-4	N/A	N/A	TBE	N/A	N/A	N/A
24V Power Supply	Built-in	Built-in	Built-in	Built-in	Built-in	6360	6360	Built-in	Built-in	Built-in	3139

TBE = To be established

*These model numbers are for educational institutions, such as high schools, accredited technical schools, and colleges or universities. These institutions must have educational accreditation or affiliation status credentials and verifiable course syllabus and/or class agenda. Other types of customers (e.g., OEMs, end user companies, or corporate training facilities) are excluded. For non-educational model numbers, contact your Lab-Volt Representative.



Lab-Volt Systems, Inc.
Farmingdale, NJ 07727
USA

Phone: 732-938-2000
Fax: 732-774-8573
E-mail: us@labvolt.com

Lab-Volt Ltée/Ltd.
Québec (Québec) G2N2K7
CANADA

Phone: 418-849-1000
Fax: 418-849-1666
E-mail: ca@labvolt.com

www.labvolt.com

1-800-LAB-VOLT
in the USA and Canada